

WHAT IS CLAIMED IS:

1. A torque-down control device, comprising:
 - a guard portion which restricts a predetermined delay amount of ignition timing using a guard value when ignition timing of an engine is delayed by the predetermined delay amount during downshifting of a transmission such that engine torque is temporarily decreased, and
 - a learning portion which corrects the guard value based on a change in a rotational speed of a rotating member whose rotational speed changes due to the downshifting.
- 10 2. The torque-down control device according to claim 1, wherein, when the predetermined delay amount is on a delay side with respect to the guard value, the ignition timing during downshifting is delayed by the guard value.
- 15 3. The torque-down control device according to claim 1, wherein when the predetermined delay amount is on an advance side with respect to the guard value, the ignition timing during downshifting is delayed by the predetermined delay amount.
- 20 4. The torque-down control device according to claim 1, wherein the rotating member is a turbine of a torque converter.
5. A torque-down control device, comprising:
 - a feedback control portion which performs feedback control of a predetermined delay amount based on a change in a rotational speed of a rotating member whose rotational speed changes when ignition timing of an engine is delayed by the predetermined delay amount during downshifting of a transmission such that engine torque is temporarily decreased.
- 25 30 6. The torque-down control device according to claim 5, wherein, when the change in the rotational speed falls outside a predetermined allowable range, the feedback control portion performs the feedback control such that the change in the rotational speed falls within the predetermined allowable range.

7. The torque-down control device according to claim 5, wherein the rotating member is a turbine of a torque converter.

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8. A torque-down control device, comprising:

a guard portion which restricts a predetermined delay amount of ignition timing using a guard value when the ignition timing of an engine is delayed by the predetermined delay amount during downshifting of a transmission such that engine torque is temporarily decreased;

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a feedback control portion which performs feedback control of the predetermined delay amount based on a change in a rotational speed of a rotating member when the change in the rotational speed of the rotating member whose rotational speed changes due to the downshifting falls outside a predetermined allowable range; and

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a learning portion which corrects the guard value based on a feedback correction amount by the feedback control portion.

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9. The torque-down control device according to claim 8, wherein, when the predetermined delay amount is on a delay side with respect to the guard value, the ignition timing during downshifting is delayed by the guard value.

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10. The torque-down control device according to claim 8, wherein when the predetermined delay amount is on an advance side with respect to the guard value, the ignition timing during downshifting is delayed by the predetermined delay amount.

11. The torque-down control device according to claim 8, wherein the rotating member is a turbine of a torque converter.

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12. A control method by a torque-down control device, comprising the steps of:

controlling ignition timing of an engine by setting a delay amount of the ignition timing of an engine to equal to or lower than a guard value during downshifting of a transmission, and

5 correcting the guard value based on a change in a rotational speed of a rotating member whose rotational speed changes due to downshifting.

13. A control method by a torque-down control device, comprising the step of:

10 performing feedback control of a predetermined delay amount based on a change in a rotational speed of a rotating member whose rotational speed changes when ignition timing of an engine is delayed by the predetermined delay amount during downshifting of a transmission such that engine torque is temporarily decreased.

15 14. A control method by a torque-down control device, comprising the step of:

controlling ignition timing of an engine by setting a delay amount of the ignition timing of an engine to equal to or lower than a guard value during downshifting of a transmission,

20 performing feedback control of the predetermined delay amount based on a change in a rotational speed of a rotating member when the change in the rotational speed of the rotating member whose rotational speed changes due to the downshifting falls outside a predetermined allowable range, and

25 correcting the guard value based on a feedback correction amount in the feedback control.